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Behind the Pain: Experiences and Coping Strategies to Primary Dysmenorrhea among Adolescent Girls in Selected Settings of Lusaka, Zambia

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Abstract **Introduction:** Primary dysmenorrhea, or painful menstrual cramps, affects many adolescent girls and can significantly disrupt their daily lives, school attendance, and social interactions. This study explored experiences and coping strategies with primary dysmenorrhea among adolescent girls in Lusaka, Zambia. **Methods:** Using a phenomenological approach, we conducted DrawingOut workshops and in-depth interviews among 20 adolescent girls in Lusaka in August 2024. These workshops allowed girls to visually express their experiences with menstrual pain and the strategies they use to manage it. The research team analysed these drawings and interview transcripts to identify recurring themes using thematic analysis with the aid of Atlas.ti software. **Results:** Findings show that primary dysmenorrhea affects many aspects of the adolescents' lives. Pain often leads to missing school, social withdrawal, and emotional distress. Barriers to getting healthcare include dismissive attitudes from healthcare providers, reliance on traditional remedies, and a lack of family support or understanding. Misconceptions and minimal education on menstrual health further complicate these experiences, leaving girls with few effective ways to manage their pain. Common coping strategies include over-the-counter painkillers, traditional remedies, and personal adjustments, although these strategies are often only partly effective. **Conclusion:** The study underscores that primary dysmenorrhea is not merely a physical issue but also affects girls' mental and social well-being. There is an urgent need for better menstrual health education, more accessible healthcare tailored to adolescent needs, and support systems that address cultural stigmas and misconceptions. Improved resources and understanding can help girls manage dysmenorrhea more effectively and enhance their quality of life.

Keywords: *Primary Dysmenorrhea, Adolescent Girls, Coping strategies, Menstrual Health*

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1. Introduction

Primary dysmenorrhea is a common condition among girls who have started menstruating [1,2,3]. It is defined as painful menstrual cramps in females with no pelvic abnormalities and usually begins at the onset of menstruation [4,5,6]. This condition mostly affects females aged 20 years or younger [7]. Symptoms include cramping pain, often concentrated in the lower abdomen, lower back, and inner thighs. Some individuals also report additional symptoms like nausea, vomiting, headaches, and dizziness [8].

The severity of pain varies among individuals and those experiencing more intense pain often facing severe consequences [9]. Pain is a subjective experience, defined as whatever the individual experiencing it describes, and existing whenever they report it [10]. It can be said that it is highly subjective and individualized; it is shaped by both physical sensation and personal, cultural and emotional factors [11]. Thus, while primary dysmenorrhea is a global issue, each individual's experience is unique, highlighting the deeply personal nature of pain.

Globally, primary dysmenorrhea affects between 45% and 95% of females of reproductive age, with 2% to 29% experiencing intense pain [12]. In Nigeria, the prevalence has been reported to reach as high as 92.96% [13]. In Zambia, while comprehensive data on primary dysmenorrhea is limited, menstrual health challenges remain significant. Adolescent girls face barriers such as inadequate menstrual health education, limited access to

menstrual hygiene products and cultural stigma surrounding menstruation which exacerbate the impact of dysmenorrhea in their daily lives [14,15]. These challenges underscore the need for localized data to better understand the prevalence and impacts of primary dysmenorrhea within the Zambian context.

The implications of primary dysmenorrhea are far-reaching, particularly in educational and economic contexts. Severe cases can result in absenteeism from school, reduced academic performance, and diminished productivity [16]. These consequences not only affect individual educational opportunities but also face additional financial burdens on families, particularly in contexts where adolescent girls miss learning opportunities due to intense pain [1].

Coping strategies for managing primary dysmenorrhea are varied and influenced by individual, social and cultural contexts [1]. Common approaches include pharmacological treatments such as over-the-counter painkillers, including ibuprofen and paracetamol, as well as hormonal therapies [17]. Non-pharmacological methods, such as heat therapy, exercise, yoga and dietary adjustments, are also widely used [18]. In many low-income settings, including Zambia, traditional remedies like herbal teas and massages are frequently relied upon due to limited access to healthcare [19,20]. Cultural beliefs and family practices play a significant role in shaping these strategies. For instance, some communities encourage rest during menstruation while others promote the use of specific herbs or spiritual interventions [21].

Despite these efforts, many girls find these strategies insufficient to fully alleviate their symptoms, leading to further disruptions in daily life. Studies have found that due to primary dysmenorrhea, adolescent girls suffer from mood swings, irritability and difficulty interacting socially, which can contribute to feelings of isolation and frustration [22]. Research from Ghana, highlighted the impact of dysmenorrhea on students' daily lives where some girls expressed coping desires such as wishing for early menopause or even male identity to escape menstruation-related discomfort [23]. Some students considered early pregnancy as a means to stop menstruating, though this path introduces risks of teenage pregnancy, complications, and potential economic hardship for both the mother and child [23,24].

Further research is needed to gain a deeper understanding of the experiences and coping strategies related to primary dysmenorrhea among school-going adolescent girls in Zambia, Lusaka, District. Understanding these strategies and their effectiveness can inform interventions to support adolescent girls in managing primary dysmenorrhea more effectively.

Aim

This study aimed at exploring the experiences and coping strategies of adolescent girls living with primary dysmenorrhea in Lusaka District, Zambia, to inform effective and context-specific interventions.

2. Methods

Study Design

This phenomenological study design was conducted in August 2024, building on our previous work that focused on the prevalence and associated factors of primary dysmenorrhea and its effects on quality of life among adolescent girls in the same area (unpublished data). The study design was well suited for this research, as it focuses on exploring and understanding the participants lived experiences and how they cope with those experiences [25].

Study Setting

The study took place in Lusaka District, Zambia, across eight selected schools. Lusaka was chosen due to its unique demographics, including a fast-growing youth population and differing levels of healthcare access. The study included both private and public schools in urban and peri-urban areas, carefully selected to represent a diverse group of adolescent girls from various socioeconomic backgrounds. Schools were categorized into those located in low-density areas and high-density areas. To ensure a balanced representation, 5 girls aged 10-14 years were selected from each type of school, and 5 girls aged 15-19 years were selected from each type of school. Only girls who had reported experiencing primary dysmenorrhea were included in the study. The selection of eligible participants within each school was done using a purposive sampling method, ensuring that only those who met the study's criteria were included. This approach allowed for a comprehensive understanding of the experiences and coping strategies of adolescent girls across different economic contexts and age groups.

Study population

The study focused on adolescent girls aged 10-19 years from Lusaka District, Zambia, with participants from both high-density and low-density areas. High-density areas are more crowded and often have limited access to healthcare, while low-density areas are less congested and generally offer better healthcare services. This diversity helped capture varied experiences and coping strategies related to primary dysmenorrhea. The population was divided into two main age groups: Group 1: Adolescent girls aged 10-14 years and Group 2: Adolescent girls aged 15-19 years.

Eligibility criteria:

- Age: Participants were required to be within the age range of 10-19 years
- Diagnoses: Participants must have self-reported a history of primary dysmenorrhea, defined as painful menstrual cramps with no underlying pelvic abnormalities.
- School enrolment: Only adolescent girls who were currently enrolled in school at the time of data collection were eligible.
- Residence: Participants were residents of Lusaka, District, either in a high-density or low-density area.
- Informed consent/ assent: Written informed consent from both the participants and were necessary a guardian or parent was required.

Sample size determination and sampling procedure

The sample size for this study was determined using purposive sampling, aiming to capture a comprehensive range of experiences and coping strategies related to primary dysmenorrhea among adolescent girls. Based on qualitative research guidelines, a sample size of 15-30

participants is generally sufficient to achieve data saturation, where no new themes emerge from additional interviews [25]. Given the detailed insights and the manageable scope of the study, a final sample size of 20 participants was chosen to ensure sufficient depth and richness of data, allowing for a thorough and comprehensive analysis.

Initially, purposive sampling was used to categorize schools into two groups: i) primary schools and ii) secondary schools. This was done to ensure representation from both school types, capturing diverse experiences of adolescent girls at different educational levels. From this, a simple random sampling technique was applied to select eight schools from all eligible schools in Lusaka District. Each school was assigned a unique number, and a random number generator was used to select eight schools, ensuring unbiased school selection.

With permission from the Ministry of Education (REF MOE4/15/156), once the schools were selected, adolescent girls who self-reported experiencing primary dysmenorrhea were identified for inclusion in one of the two DrawingOut workshops. Each workshop comprised 10 participants and the selection process followed these steps:

1. Screening: All adolescent girls who met the eligibility criteria (ages 10-19, enrolled in school and self-reported primary dysmenorrhea) were initially screened
2. Grouping by Age and Area (The eligible girls were categorized into two age groups)
   - Group 1: Adolescent girls aged 10-14 years
   - Group 2: Adolescent girls aged 15-19 years
3. Area-Based selection: For each age group, 10 participants were chosen, with 5 girls from a low-density area and 5 girls from a high-density area to ensure representation from both types of residential settings.

Data collection tool and procedure

Qualitative participatory data were collected using the DrawingOut workshop method and in-depth interviews. The DrawingOut workshop was chosen for its ability to enable participants to visually express experiences, which was effective in addressing sensitive topics, offering deeper emotional and psychological insights compared to traditional verbal methods [26]. By allowing participants to represent complex feelings and experiences, this creative approach facilitated trust and enriched the depth of data. The method was complemented by follow-up in-depth interviews to validate and expand on the visual narratives, ensuring a comprehensive understating of participants experiences.

The workshops were structured in five steps: introducing project objectives, guiding participants in creating personal drawings, discussing and finalizing narratives in group settings, selecting participants for follow-up interviews, and conducting guided discussions during interviews. This dual-method approach, completed within two weeks, triangulated findings by combining visual and verbal data, enhancing the reliability and richness of the insights [27].

This approach aligns with the principles of participatory research, which promote trust between communities and researchers, facilitate the translation of findings into policy and practices and ensure uptake by engaging stakeholders in context-specific and evidence-informed decision-making processes [28]. Such participatory methods also foster local ownership of research, maximizing the relevance and impact of health interventions [29].

Data collection team

Data collection was carried out by three trained research assistants with fieldwork experience, who underwent specialized training in qualitative data collection methods for this study. Their expertise ensured the maintenance of quality assurance throughout the entire data collection process.

Data analysis

The data collected in this study was managed and analysed using Atlas.ti software [30]. Both textual and visual data were captured, with thematic analysis conducted inductively [31]. The analysis began with the transcription of audio recordings from the workshops, which included conversations during the drawing activities as well as participants' interpretations of their drawings. The transcripts also incorporated data from 10 in-depth interviews conducted with adolescent girls following the DrawingOut workshop.

Once transcribed, we linked the transcripts to the participants' drawings. A thorough review of the transcripts was conducted by reading and re-reading the data to identify initial codes on a line-by-line basis. These codes were generated based on participants' responses and related content. The next step involved collecting data relevant to each code.

After the initial coding, we searched for emerging themes within the data. The themes were reviewed to ensure they accurately reflected the coded extracts and the overall data set. Special attention was given to how the themes related to the visual data (the drawings) and how these were interpreted by the participants.

Once the themes were refined, they were defined and named, capturing the essence of the data. This comprehensive process ensured a deep understanding of the adolescents' lived experiences, as represented through both their words and visual expressions.

Ethics statement

This study received approval from the University of Zambia Biomedical Research Ethics Committee (UNZABREC) under REF 3601-2023 and the National Health Research Authority (NHRA) under REF NHRA00004/12/04/2023. To maintain privacy and anonymity, special codes were used to identify participants. Participation was entirely voluntary. Informed consent was obtained from all participants and for adolescent girls below the age of consent (under 18 years), consent was obtained from their parents or legal guardians, while assent was obtained from the participants themselves. No incentives were offered, ensuring that participation was motivated solely by a desire to contribute to scientific research.

3. Results

This study explored the experiences and coping

strategies of 20 adolescent girls aged 10–19 years from Lusaka District, Zambia, all of whom self-reported experiencing primary dysmenorrhea. Participants engaged in DrawingOut workshops, using visual metaphors and free drawing sessions followed by group discussions to share their experiences and in-depth interviews.

Seven themes were identified that capture key aspects of the experiences and coping strategies of adolescents with primary dysmenorrhea: 1) Physical and Emotional Impact, 2) Disruption to Social and Academic Life, 3) Barriers to Accessing Healthcare and Support, 4) Knowledge Gaps and Misinformation about Menstruation, 5) Dependence on Over-the-Counter Medication, 6) Traditional Healing and 7) Psychological Coping strategies.

Theme 1: Physical and emotional impact

Participants described how primary dysmenorrhea profoundly impacted both their physical and emotional well-being. One adolescent characterized her experience as a "storm" inside, where severe pain disrupted her ability to function, often immobilizing her and preventing engagement in daily activities. She explained (Figure 1);

Figure 1. Drawing of adolescent anticipating pain

"It feels like there's a storm happening inside me. It's so painful I am already imagining my next cycle. My stomach hurts so much I cannot move sometimes. I just want to sleep. It also makes me really sad and angry and I feel no one really understands what I'm going through."(17-year-old girl, DrawingOut workshop)

This intense physical discomfort was coupled with feelings of sadness, frustration, and isolation, as she felt misunderstood in her struggle.

Another participant described her emotional state as being under a "heavy cloud" when thinking about her period, emphasizing a deep sense of sadness and fear. She expressed (Figure 2),

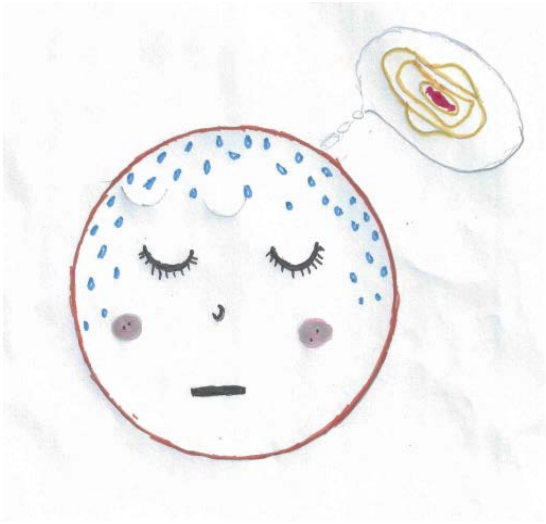

Figure 2. Drawing expressing how adolescent thinks of menstruation

"When I think about my period, it feels like a heavy cloud is over me. I just see the blood and pain, and it makes me feel sad and scared. "(17- year old girl, DrawingOut workshop).

The metaphor of a "heavy cloud" reflects the emotional weight that primary dysmenorrhea places on her mental state, where anticipation of pain and discomfort triggers negative emotions long before physical symptoms begin.

Another participant described intense physical symptoms sharing;

"During my period, the pain is bad like very bad I tell you. Sometimes, I feel weak and dizzy, like I can't do anything. I get upset because I can't go to school or enjoy my time with friends. It makes me feel lonely because I don't want to talk about it."(15-years old, Interview)

This highlights the disruptions that primary dysmenorrhea brings to social and academic life, as the pain prevents her from engaging in daily activities and intensifies her feelings of loneliness. One adolescent also conveys the sensation of pain as a physical force, describing;

"When my period comes, I feel a lot of pain in my stomach. It feels like something is squeezing my insides". (18-years old, Interview)

This vivid description of pain as a squeezing sensation emphasizes the physical intensity of primary dysmenorrhea, further illustrating the profound impact on physical functioning.

Together, these accounts underscore the multifaceted impact of primary dysmenorrhea on adolescents, affecting not only their physical health but also their emotional state, social life and sense of connection with others.

Theme 2: Disruption to social and academic life

The impact of primary dysmenorrhea on adolescents' social and academic lives was prominently expresses by several participants. The recurring pain often let to missed school days and a diminished ability to engage in regular activities. One participant shared (Figure 3);

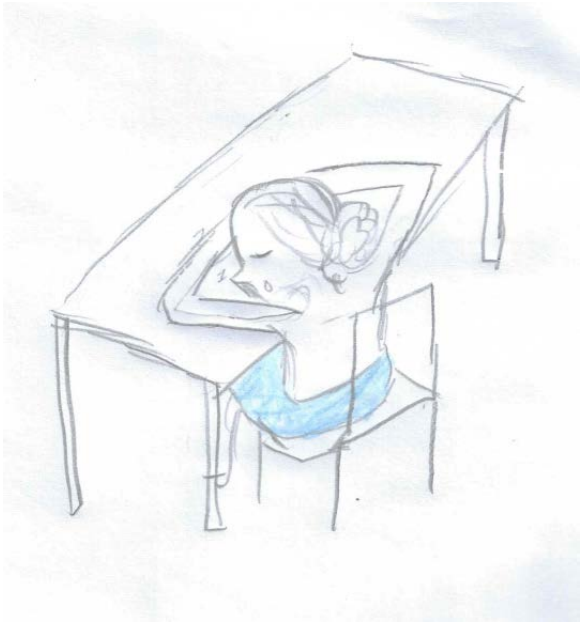

Figure 3. Drawing of adolescent girl sleeping

"Sometimes, all I want to do is sleep. The pain makes me so tired that I can't think about anything else. It's hard to go to school when I just want to rest."(13-year-old girl, DrawingOut workshop)

This sentiment emphasizes the physical exhaustion that often accompanies menstrual pain, which limites adolecsnts energy to engage in both academic and soical pursuits.

In addition, one participant expresses frustration about the lack of understaing from her family, describing how her father responded with surprise when she explained her pain, saying (Figure 4);

Figure 4. Drawing of adolescent girl explaining her pain to her father

"Once I told my dad I can't go to school because of the pain, he looked surprised. I don't want to eat or clean, and it feels like he doesn't really get how bad it is. I just wish I could stay in bed"(15-year-old girl, DrawingOut workshop)

This participant lives with only her father, which may impact the level of support and understating she receives for issues related to menstruation and reproductive health. Without a mother or female family member to run to, she may lack the sympathetic guidance and shared experience that can be particularly supportive for managing primary dysmenorrhea. This scenario highlights the challenges adolescent girls face when family dynamics limit understanding and emotional support, leaving them to navigate the psychological and physical burden of primary dysmenorrhea largely on their own.

Lastly, another participant described the difficulty of managing household responsibilities while dealing with painful menstrual cramps, stating;

"It's hard when I have cramps because I still have to clean and cook for everyone at home. I don't think its fair (short laugh). I want to sleep, but my mum will call me."(17-year-old girl, Interview)

Her account highlights how, despite the debilitating pain, she faces expectations to fulfill domestic duties, underscoring the added burden of traditional gender roles in her home. These responsibilities limit her ability to rest and recover, intensifying her physical and emotional strain. This situation not only reflects the impact of primary dysmenorrhea on her well-being but also emphasizes how familial expectations may restrict her ability to prioritize self-care.

Theme 3: Barriers to seeking healthcare and support

The findings under this theme reveal several obstacles that adolescent girls face when seeking healthcare or support for managing primary dysmenorrhea. These barriers include dismissive attitudes from healthcare providers, cultural stigma, a reliance on traditional remedies, and the influence of social narratives among peers.

Several participants noted that when they sought medical assistance, they encountered dismissive attitudes from healthcare providers, which deterred them from further attempts to seek help. One participant shared (Figure 5);

Figure 5. Drawing of adolescent girls experience at health centre

"When you go to the clinic, they don't take you seriously. They just say it's period pain, and they don't really help. I feel like there's nothing more they can do, so why go? Also, majority of the time they do not have any medicine and it is always full"(14-year-old girl, DrawingOut workshop)

This account suggests that limited resources, coupled with a lack of empathy from providers, left her feeling unsupported and discouraged from returning for medical care. The perception that primary dysmenorrhea is not a legitimate health concern perpetuates a sense of helplessness and isolation among the girls experiencing severe pain.

Cultural practices and familial beliefs also shaped participants decisions about seeking healthcare. For instance, one participant described how her family's

reliance on traditional remedies prevented her from seeking medical treatment (Figure 6);

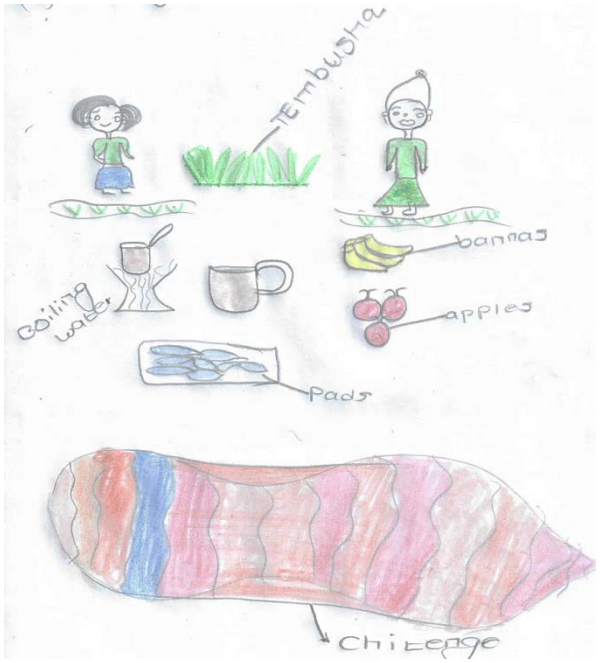

Figure 6. Drawing of what adolescent girls uses to help reduce pain

"In my family, we use herbs more than medicine. It's what my mom believes in, so I don't really go to the clinic for help. Some people think it's not right to talk about periods, so it feels weird to ask for help."(17-year-old girl, DrawingOut workshop)

This perspective illustrates how cultural stigma around menstruation and a reliance on herbal treatments can limit access to healthcare services, creating additional barriers for girls in seeking appropriate support.

Peer influence and social narratives further discouraged participants from seeking help, as many have internalized the idea that menstrual pain was simply a "normal" part of life. One participant reflected on the discouragement she received from friends;

"I wanted to ask for help at the clinic, but my friends at school told me no one will help me they will just tell me it is period pain and I should be strong. That its normal. So, I never went."(14-year-old girl, Interview)

Figure 7. Drawing of envisioned menstrual health Support section at health centre

This account demonstrates how the normalization of dysmenorrhea among peers reinforces the reluctance to seek healthcare, as many girls feel pressure to endure the pain without assistance.

Lastly, participants highlighted the lack of a dedicated space within the healthcare system for addressing menstrual health. One participant expressed this sentiment by saying (Figure 7);

"I wish there was a place in the hospital just for us girls…like a Menstrual Health section (applauds). If only there was a big bottle of medicine that could really help with the pain. I dream of a day when we don't have to suffer."(13-year-old girl, DrawingOut workshop)

This sentiment highlights the need for specialized healthcare services that prioritize menstrual health, offering effective treatment options and creating a supportive environment. Such services would address the existing gaps in care and better meet the unique needs of adolescent girls.

Theme 4: Knowledge gap and misinformation about menstruation

The findings reveal a significant knowledge gap and prevalent misinformation regarding menstruation among adolescent girls, with limited education on what to expect, especially around pain and management strategies. Many participants shared that they received minimal or confusing information about menstruation before it began. One girl expressed her initial confusion and fear, noting (Figure 8);

Figure 8. Drawing of adolescent girl in pain

"I didn't know what was happening when I first got my period. No one explained it to me, so I thought something was wrong with me. It was only after talking to my friends that I realized everyone goes through it differently." (15-year-old girl, DrawingOut workshop)

This underscored the lack of early clear guidance that could help demystify the menstrual experince.

Family influences also contributed to the misinformation. Some participants received traditional advice that included prohibition and myths around menstruation, which heightened confusion. One adolescent shared;

"My grandmother was the first one to tell me about periods. She told me a lot about what not to do instead of

warning me about the pai…..she told me that I should not put salt in the food I cook, if I do the men who will eat will get sick... she also said I should not put a baby on my back because it will die". (16-year-old girl, Interview)

Such myths added fear and misunderstanding, further complicating these young girls understanding of their own bodies.

In addition, many girls only learned about menstruation informally through friends or siblings, often without adequate information about the potential pain involved. For example, one participant mentioned;

"Before I started my period, I didn't know it was like this (laughter). My older sister mentioned it a bit, but she didn't say how bad it could get". (14-year-old girl, Interview)

This limited information exchange reinforced a lack of preparedness for menstrual discomfort, leaving many girls to navigate their symptoms alone or with incomplete knowledge.

Theme 5: Dependence on over-the-counter medication

Participants identified various coping strategies to manage the pain associated with primary dysmenorrhea. These strategies ranged from pharmacological solutions to cultural practices as well as personal behavioural adjustments.

Several adolescents reported using medication to alleviate menstrual pain, with one participant mentioning (Figure 9);

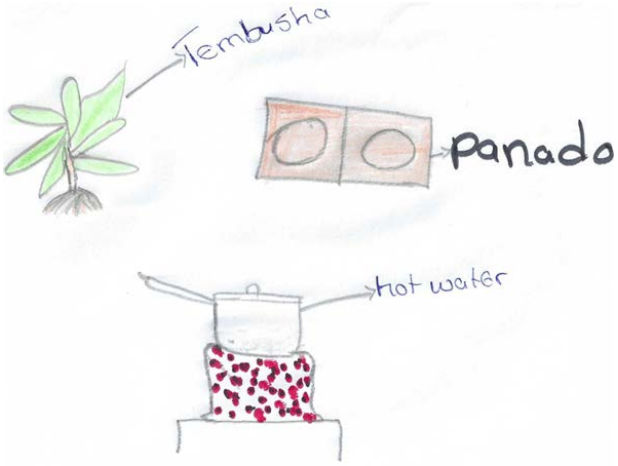

Figure 9. Drawing of over-the counter medicine and natural remedies

"I use painkillers like Panadol, but I try not to take too many because I am scared of what it can do to me inside. I also drink hot water with Aloe Vera (Tembusha) when I have time to prepare it."(15-year-old girl, DrawingOut Workshop)

Similarly, another paricipant stated (Figure 10);

"One day my period pain got really bad, my parents took me to the clinic. The nurse gave me some pills and told me it would help with the cramps. Now, I take them whenever the pain gets too much to handle."(13-year-old girl, DrawingOut Workshop)

These reports ilustrate how some participants rely on over-the-counter painkillers as their primary method of pain relief though conerns about side effects may limit their use.

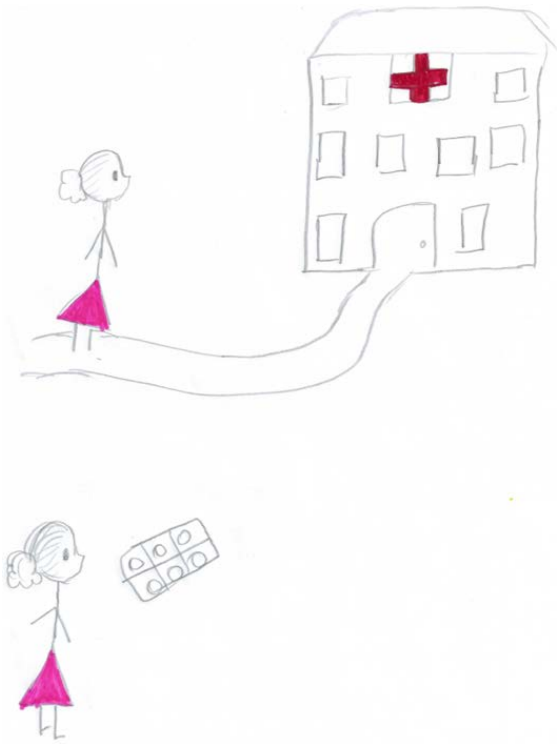

Figure 10. Drawing of adolescent girl accessing medicine from health centre

Theme 6: Traditional Healing

In contrast, others described using traditional remedies passed down through family members. One participant shared (Figure 11);

Figure 11. Drawing of mother giving adolescent girl traditional remedies

"At home, we use traditional herbs. My mom makes a tea with mangoes or guava leaves or roots, and I drink it whenever the pain comes. It helps a bit, but not always." (16- DrawingOut Workshop)

Another particioant decsribed a more elaborate cultural practice, saying (Figure 12);

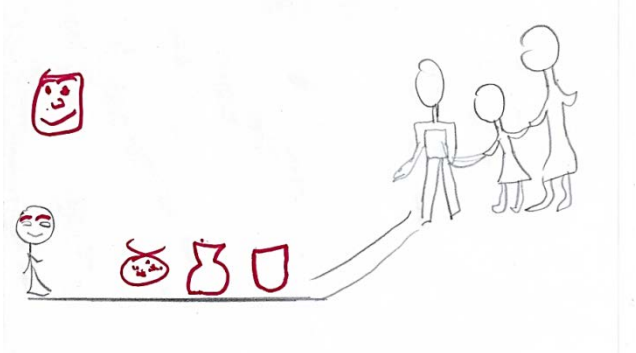

Figure 12. Drawing of adolescent girls' parents taking her to see a traditional healer

"(Nervous laughter) …Do not laugh but once when I was in too much pain, my parents decided to take me to a traditional healer at the village. I remember the visit well (short laughter) the healer prepared remedies made from roots and I think some black water. He explained that these medicines would help reduce the pain. So now, when my period starts, I take these remedies hoping that they will ease the cramps when they come. It's become part of my routine, and my mother say it's a way to prepare my body for the discomfort. "(14-year-old girl, DrawingOut Workshop)

These accounts highlight how some participants, particularly those from families that rely on traditional healing practices turn to natural remedies in hopes of reducing menstrual discomfort.

Theme 7: Psychological coping strategies

In addition to medication and traditional remedies, some participants reported behavioural adjustments as part of their coping strategies. For example, one girl shared;

"When I have cramps, I lay down in a funny position on my stomach to feel better..."(14-year-old girl, Interview)

Similarly, another paricipant mentioned;

"…...I pray about it and hope for the best." (13-year-old girl, DrawingOut workshop)

Indicating the role of spirituality in managing menstrual pain. This suggest that some adolescents may seek emotional or psychological relief through prayer or other personal practices.

However, not all participants felt supported in their coping efforts. One girl expressed the emotional burden of handling pain with limited familial empathy, stating;

"My mother tells me to be strong because I'm a woman, and that makes me feel like I should handle it on my own, even when it pains so much, I do not have to complain I have to be silent and not tell anyone I am sick."(13-year-old girl, Interview)

This reflects the pressure some adolescents feel to endure pain without expressing discomfort, which may inhibit their ability to seek help or communicate their struggles.

4. Discussion

This study aimed to explore the experiences and coping strategies of adolescent girls living with primary dysmenorrhea, shedding light on how menstrual pain disrupts their daily lives and influences their physical, social and emotional well-being. The findings reveal a complex interplay of factors that shape how these young girls experience and manage menstrual pain, including gaps in education, societal stigma, cultural beliefs and limited access to healthcare. These findings are consistent with existing literature, which highlights the significant impact of primary dysmenorrhea on adolescent girls' academic performance, social interactions and overall quality of life [32,33,34].

Adolescent girls in this study reported considerable challenges in managing their pain associated with primary dysmenorrhea. Many described how the severity of menstrual cramps often led to missed school days, difficulty concentrating in class, and feelings of isolation. These experiences are consistent with previous studies that found that primary dysmenorrhea is one of the leading causes of school absenteeism among adolescent girls, often resulting in negative academic outcomes [35]. In addition to academic disruptions, the study also highlighted social consequences, with many participants avoiding social events or physical activities due to the pain. This aligns with findings from another study, which have shown that primary dysmenorrhea contributes to emotional distress affecting self-esteem and social engagement during adolescent [36].

The study findings also underscore the knowledge gaps and misinformation surrounding menstruation, particularly regarding the severity of primary dysmenorrhea. Many participants reported that they received minimal or no education about menstrual health, particularly in relation to managing pain. Some girls were left to rely on peers, family members or personal experiences to understand their menstrual cycles, leading to confusion and anxiety. The lack of comprehensive education on menstruation and menstrual health is a recurring issue in adolescent health, as found in other studies showing that many girls are not adequately informed about the physiological and emotional aspects of menstruation [37,38]. Inadequate education leaves adolescent girls vulnerable to misinformation and mismanagement of menstrual health issues, making it crucial for schools and healthcare systems to provide more detailed, age-appropriate information about menstrual health, pain management and when to seek medical attention.

This study also highlights the cultural dimensions of menstrual and menstrual health. In some households, traditional beliefs about menstruation such as the use of specific foods or practices may offer comfort but also pose risks if they replace medical treatment that could better manage primary dysmenorrhea. In other instances, cultural norms around silence and secrecy exacerbate the stigma surround menstruation, further discouraging girls from seeking help or discussing their experiences. This finding is consistent with research showing that cultural perceptions of menstruation strongly influence how girls manage and understand menstrual health [39].

An additional layer of complexity emerges when considering the family dynamics in which these girls are living. Girls living with only their fathers, as opposed to having either parents or a female caregiver, may experience unique challenges in understating and managing menstruation. In such households, fathers may lack the knowledge or empathy to address menstrual pain or provide the emotional support needed during

menstruation [40]. As one participant described, the lack of understanding from her father, who did not fully grasp the severity of her pain, heightened her sense of isolation. This is particularly challenging in a cultural context where menstruation is already surrounded by stigma and silence. The father may not only be unaware of the physiological and emotional aspects of dysmenorrhea but may also unintentionally reinforce societal norms that discourage open discussion about menstruation. This dynamic can leave girls without the necessary emotional support, compounding the physical and psychological burdens of primary dysmenorrhea. This aligns with existing research on the importance of familial support, particularly the role of mothers, in helping adolescents navigate menstrual health [41]. This situation underscores the need for inclusive, culturally sensitive education that supports both parents and caregivers in understanding and addressing the needs of their daughters during menstruation, particularly when fathers are the primary figures in the household.

A significant theme that emerged from the study was the reliance on coping strategies, both traditional and medical, to manage menstrual pain. Participants used over-the-counter painkillers, herbal remedies and non-pharmacological methods such as laying in specific position to alleviate discomfort. The use of traditional herbal remedies, while common in many cultures, was also associated with mixed effectiveness, with many girls reporting only partial relief. Previous research has similarly found that while traditional remedies are widely used, they may not always be effective in managing severe menstrual pain, as they have lower effectiveness compared to prescription-strength Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) or hormonal contraception, which are more effective but require a medical consultation to obtain. [42], highlighting the importance of improving access to evidence based medical treatments. The reliance on these alternative methods may be influences by cultural beliefs or limited access to healthcare services. This is especially true in settings where healthcare professionals may dismiss the severity of menstrual pain, reinforcing the perception that it is normal and unavoidable part of growing up. The dismissive attitudes from healthcare providers reported in this study reflect a broader issue of inadequate attention to menstrual health in clinical practice, a concern echoed by many studies on adolescent health [43].

In addition to medical and traditional coping strategies, the study pointed to the emotional and psychological coping mechanism employed by the participants. Many girls turned to prayer or spiritual practices, while other internalized the pain, learning to “endure” and hide their discomfort [42]. The emphasis on “being strong” or enduring pain without complaint reflects societal pressures that discourage open discussion about menstrual health, especially in contexts where menstruation is stigmatized. The social silence around menstruation worsens the emotional burden of dysmenorrhea and often prevents young girls from seeking help or sharing their struggles with others [34]. This cultural stigma surrounding menstruation and menstrual pain is a common barrier to care, as documented in studies from various parts of the world [44].

Overall, this study contributes valuable insights into the lived experiences of adolescent girls with primary dysmenorrhea. It underscores the importance of addressing the social, educational, and healthcare-related barriers that these girls face in managing menstrual pain. These findings suggest the need for comprehensive menstrual health education that includes information on primary dysmenorrhea, effective pain management strategies, and how to navigate healthcare systems. Additionally, there is a clear need for more responsive healthcare services that acknowledge and address the specific needs of adolescent girls, providing appropriate treatments and support for menstrual health concerns. Finally, addressing the cultural stigma surrounding menstruation and fostering open, supportive environments where girls can freely discuss their menstrual health is essential for improving their overall well-being and quality of life. By addressing these challenges, we can help ensure that adolescent girls are better equipped to manage primary dysmenorrhea and lead healthier, more fulfilling lives.

This study has strengths that enhance our understanding of the experiences and coping strategies of adolescent girls with primary dysmenorrhea. One notable strength is the use of the Drawing Out workshop as a data collection method, which allowed participants to express their experiences creatively and visually in a supportive and engaging environment. This approach fostered trust, encouraged open dialogue, and enabled participants to share personal insights that might otherwise have remained unspoken. Additionally, the study included a diverse sample of girls from both high-density and low-density areas, providing valuable insights into how socioeconomic and cultural contexts influence their experiences with dysmenorrhea.

However, the study also has limitations. The qualitative approach and small sample size restrict the generalizability of the findings to broader populations, particularly those from different geographic or cultural settings. The reliance on self-reported data introduces potential biases, such as memory recall and social desirability bias, which may have influenced participants' willingness to openly discuss sensitive topics like menstruation. Nevertheless, efforts were made to address these challenges. The Drawing Out workshops were designed to create a safe and non-judgmental space, encouraging participants to share their experiences comfortably. Facilitated discussions and activities during the workshops further promoted openness while respecting the sensitive nature of the topic.

The Drawing Out workshop itself presented some challenges. The abstract nature of drawing may not have fully captured the complexity of participants' emotions, and some may have struggled to articulate their experiences visually. For participants less familiar with visual expression, this method might have posed a barrier to open communication. To address these challenges, the study employed strategies to ensure a more complete capture of participants’ experiences. After each drawing session, facilitated group discussions allowed participants to elaborate on the themes in their drawings. This process enabled them to articulate their emotions and experiences more clearly, complementing the visual data with verbal insights. Together, these approaches provided a richer and more holistic understanding of the adolescent girls' experiences and coping strategies.

5. Conclusion

In conclusion, primary dysmenorrhea is a common and debilitating condition that affects the physical, emotional, and social well-being of adolescent girls. The barriers to seeking healthcare, coupled with the knowledge gap and reliance on traditional remedies, highlight the urgent need for improved education, healthcare access, and social support. By addressing these challenges, it is possible to improve the quality of life for adolescent girls living with primary dysmenorrhea and ensure they receive the care and support they need to thrive both academically and socially.

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Conflict of Interest

The authors have no conflicts of interest to declare.

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Ethical Considerations

Ethical considerations were carefully addressed and implemented in the research study, including obtaining informed consent and assets from participants, ensuring their privacy and confidentiality, and conducting the study in accordance with relevant ethical guidelines and regulations.

Author Contributions

The authors (N.E.N. and C.J.) contributed to the study conception and design. NEN collected the data and conducted the data analysis and interpretation. N.E.N drafted the manuscript. N.E.N., J.M.Z., M.N.M., and C. J. reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

Availability of Data and Materials

The processed datasets are not publicly available but can be obtained from the corresponding author upon reasonable request.

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